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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,684	10/08/2004	Noriko Endou	Q83593	3894
23373	7590	08/24/2006		EXAMINER
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			PENG, KUO LIANG	
			ART UNIT	PAPER NUMBER
			1712	

DATE MAILED: 08/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/510,684	ENDOU ET AL.	
	Examiner	Art Unit	
	Kuo-Liang Peng	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 5/30/06 IDS.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-21 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-21 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/30/06, 10/8/04</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Applicants' preliminary amendment filed on October 8, 2004 is acknowledged. Claims 4, 6, 8, 10-12, 19 and 21 are amended. Now, Claims 1-21 are pending.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to **a single paragraph** on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-14 and 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 1 (line 2), it is not clear as to what "an organometal type" refers to.

Claim 4 recites the limitation "the other monomer described above" in line

5. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 recites the limitation "Formulas (I), (II) and (III) each described above" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitations "Formulas (IV) or (V)" and "Formula (VI)" in lines 2-3. There are insufficient antecedent base for these limitations in the claim.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

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A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1, 5 and 7-9 provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 10-12 of copending Application No. 10/497,462. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following reason: Claims 10-12 of the copending Application are directed to processes for producing modified polymers which obviously read on the process set forth in the instant claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 12 and 14-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakagawa (US 6 274 688).

Nakagawa discloses a modified vinyl polymer (such as (co)polymers of butadiene, isoprene, styrene, etc.) containing hydrolyzable silyl groups. (col. 4, lines 6 to col. 5, line 67) The hydrolyzable silyl groups can be introduced by methods described in col. 14, lines 21-42. Nakagawa is silent on the specific process of preparing the (co)polymers set forth in the present invention. However, the instant claims are product-by-process claims. “Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process” In re Thorpe, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Nakagawa further teaches the use of the condensation accelerator as described in References Examples.

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10. Claims 1-12 and 14-18 are rejected under 35 U.S.C. 102(b) as being anticipated by JP906 (JP 56-104906).

JP906 discloses a modified polymer by a process comprising treating a living polymer with a hydrocarbyloxysilane compound according to the instant claims. A condensation accelerator such as tin or titanium compound can be used for hydrolysis-condensation reaction (i.e., in the presence of water). (paragraphs 6-18 and Examples). The disappearance of the typical red color of the living polymer in Examples indicating the complete deactivation of the living polymer ends clearly shows the amount of the hydrocarbyloxysilane compound is in a stoichiometric amount or an excess amount thereover.

11. Claims 12 and 14-18 are rejected under 35 U.S.C. 102(b) as being anticipated by JP998 (JP 2000-086998).

JP998 discloses a composition comprising a modified polymer by converting a polymer containing alkenyl, hydroxy, etc. groups to a hydrolyzable silyl groups. ([0004]-[0017], [0023] and [0072]-[0081]) JP998 does not disclose the process set forth in the instant claims. However, the instant claims are product-by-process claims. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The

patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process" In re Thorpe, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). JP998 further teaches the use of the condensation accelerator as described in [0071]. JP998 further demonstrates the condensing the modified polymer in a conventional manner ([0088]). As such, the condensation is conventionally performed in atmosphere, i.e., the presence of moisture.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 13-14 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakagawa.

Nakagawa discloses a modified vinyl polymer, *supra*, which is incorporated herein by reference. Nakagawa is silent on the specific Mooney viscosity in the claimed invention. However, Nakagawa teaches the use of the polymer as a material for adhesives, etc. (col. 19, lines 19-32) The viscosity of the material can affect the processibility of the adhesives, etc. Therefore, the viscosity of the material is a Result-Effective variable. Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to utilize a polymer with whatever viscosity through routine experimentation in order to obtain a material having a desired processibility. Especially, Applicants do not show the criticality of the viscosity. See MPEP 2144.05 (II).

14. Claims 13-14 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP906.

JP906 discloses a modified polymer, *supra*, which is incorporated herein by reference. For Claims 13-14, JP906 is silent on the specific Mooney viscosity in the claimed invention. However, JP906 teaches the use of the polymer as a material for adhesives, etc. (paragraph 19) The viscosity of the material can affect the processibility of the adhesives, etc. As such, the viscosity of the material is a Result-Effective variable. Therefore, it would have been obvious to one of ordinary

skilled in the art at the time of the invention was made to utilize a polymer with whatever viscosity through routine experimentation in order to obtain a material having a desired processibility. Especially, Applicants do not show the criticality of the viscosity. See MPEP 2144.05 (II). For Claims 19-20, JP906 discloses a rubber composition. (Paragraphs 18-19) However, JP906 is silent on the specific amounts of the ingredients. However, the amounts of these ingredients will affect the properties such as viscosity, strength, etc. Therefore, these amounts are Result-Effective variables. Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to utilize these ingredients with whatever amounts through routine experimentation in order to obtain a composition having desired properties. Especially, Applicants do not show the criticality of these amounts. See MPEP 2144.05 (II). For Claim 21, JP906 teaches the use of the composition for making shoe tread. As such, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to utilize the composition for tires because both the shoes and tires are brought in contact with the road surface.

15. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haynes (EP 067 468) in view of Ishikawa (US 6 191 247).

The following column and line numbers of Haynes are based on its' US equivalent, US 4 379 891.

For Claims 1-12 and 14-20, Haynes discloses a composition comprising a modified polymer derived by a process of treating a living polymer with a hydrocarbyloxysilane compound according to the instant claims. Silica can be used. (col. 2, line 8 to col. 5, line 13 and Illustrative Embodiments) Haynes is silent on the use of a condensation accelerator. However, Ishikawa teaches the use of a tin or titanium condensation accelerator to facilitate the reaction between a hydrocarbyloxysilane compound and the silanol groups on the silica surface. (col. 12, lines 13-24) Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to incorporate Haynes' condensation accelerator into Haynes' composition. Since Haynes' process of compounding the composition does particularly exclude any moisture. As such, the condensation is conventionally performed in atmosphere, i.e., the presence of moisture. Haynes further discloses a rubber composition. (col. 5, lines 5-59) For Claims 13-14, Haynes is silent on the specific Mooney viscosity in the claimed invention. However, Haynes teaches the use of the polymer as a material for footwear, etc. (col. 5, lines 5-28) The viscosity of the material can affect the processibility of the material. As such, the viscosity of the material is a Result-Effective variable.

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to utilize a polymer with whatever viscosity through routine experimentation in order to obtain a material having a desired processibility. Especially, Applicants do not show the criticality of the viscosity. See MPEP 2144.05 (II). For Claim 21, Haynes teaches the use of the composition for making shoe tread. As such, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to utilize the composition for tires because both the shoes and tires are brought in contact with the road surface.

16. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (WO 01/34658) optionally in view of Ishikawa (US 6 191 247).

The following column and line numbers of Ozawa are based on its' US equivalent, US 6 992 147.

Ozawa discloses a composition comprising a modified polymer derived by a process of treating a pseudo-living polymer with a hydrocarbyloxysilane compound according to the instant claims. (col. 5, line 38 to col. 11, lines 24) The relative amount of the hydrocarbyloxysilane to the lanthanide is described in col. 11, lines 20-24. Fillers such as silica can be used. (col. 13, lines 3-44) Ozawa

further teaches the condensation of the modified polymer. (col. 12, lines 18-38)

Ozawa also teaches the use of a condensation accelerator such as diorganotin dicarboxylates for oligomerizing the hydrocarbyloxysilane compounds. (col. 6, lines 40-59) As such, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to utilize diorganotin dicarboxylates as condensation accelerator for condensing the modified polymer because both oligomerization of the hydrocarbyloxysilane compounds and condensation of the modified polymer involves the same reaction. **Alternatively**, Ozawa teaches that a coupling agent besides the aforementioned modified polymer for treating silica surface can be used. (col. 2, lines 1-4 and col. 13, lines 45-61) Ozawa is silent on the specific use of a condensation accelerator for the purpose of facilitating the reaction between the hydrocarbyloxysilane and the silanol groups on the silica surface. However, Ishikawa teaches the use of a tin or titanium condensation accelerator to facilitate the reaction between a hydrocarbyloxysilane compound and the silanol groups on the silica surface. (col. 12, lines 13-24) Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to incorporate Ishikawa' condensation accelerator into Ozawa' composition. Since Ozawa's process of compounding the composition does particularly exclude any moisture. As such, the condensation is conventionally

performed in atmosphere, i.e., the presence of moisture. Ozawa further discloses a rubber composition for making tires. (col. 12, line 39 to col. 14, line 39) The Mooney viscosity of the composition is exemplified in Examples.

17. Claims 13-14 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP998.

JP998 discloses a composition comprising a modified polymer, supra, which is incorporated herein by reference. JP998 further teaches that fillers such as silica, etc. and resins such as epoxy resin, etc. can be used. ([0072] and [0078])

For Claims 13-14, JP998 is silent on the specific Mooney viscosity in the claimed invention. However, JP998 teaches the use of the polymer as a material for adhesives, etc. ([0072]) The viscosity of the material can affect the processibility of the adhesives, etc. As such, the viscosity of the material is a Result-Effective variable. Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to utilize a polymer with whatever viscosity through routine experimentation in order to obtain a material having a desired processibility. Especially, Applicants do not show the criticality of the viscosity. See MPEP 2144.05 (II). For Claims 19-20, JP998 is silent on the specific amounts of the ingredients. However, the amounts of these ingredients will affect the

properties such as viscosity, strength, etc. Therefore, these amounts are Result-Effective variables. Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to utilize these ingredients with whatever amounts through routine experimentation in order to obtain a composition having desired properties. Especially, Applicants do not show the criticality of these amounts. See MPEP 2144.05 (II).

18. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeishi908 (US 6 228 908) in view of Ishikawa (US 6 191 247).

Takeishi908 discloses a composition comprising a modified polymer derived by a process of treating a living polymer with a hydrocarbyloxysilane compound according to the instant claims. (col. 3, line 58 to col. 9, line 3 and Examples) Fillers such as silica can be used. The silica can be surface treated with hydrocarbyloxysilane compounds. (col. 10, line 37 to col. 11, line 64) Takeishi is silent on the specific use of a condensation accelerator. However, Ishikawa teaches the use of a tin or titanium condensation accelerator to facilitate the reaction between a hydrocarbyloxysilane compound and the silanol groups on the silica surface. (col. 12, lines 13-24) Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to incorporate

Ishikawa' condensation accelerator into Takeishi908' composition. Since Takeshi908' process of compounding the composition does particularly exclude any moisture. As such, the condensation is conventionally performed in atmosphere, i.e., the presence of moisture. Takeishi908 further discloses a rubber composition for making tires. (col. 14, line 55 to col. 15, line 2) The Mooney viscosity of the composition is exemplified in Examples.

19. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogan (US 6 573 412) in view of Ishikawa (US 6 191 247).

Hogan discloses a composition comprising a modified polymer derived by a process of treating a living polymer with a hydrocarbyloxysilane compound according to the instant claims. (col. 4, line 66 to col. 14, line 21 and Examples) Fillers such as silica, carbon black, etc. can be used. The silica can be surface treated with the modified polymer. (col. 12, lines 7-58 and col. 14, line 23 to col. 15, line 18) Hogan is silent on the specific use of a condensation accelerator. However, Ishikawa teaches the use of a tin or titanium condensation accelerator to facilitate the reaction between a hydrocarbyloxysilane compound and the silanol groups on the silica surface. (col. 12, lines 13-24) Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made

to incorporate Ishikawa' condensation accelerator into Hogan' composition. Since Hogan' process of compounding the composition does particularly exclude any moisture. As such, the condensation is conventionally performed in atmosphere, i.e., the presence of moisture. Hogan further discloses a rubber composition for making tires. (col. 4, lines 6-21) The Mooney viscosity of the composition is exemplified in Examples.

20. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morita (US 6 369 167) in view of Ishikawa (US 6 191 247).

Morita discloses a composition comprising a modified polymer derived by a process of treating a living polymer with a hydrocarbyloxysilane compound according to the instant claims. (col. 3, line 65 to col. 7, line 35 and Examples) Fillers such as silica, carbon black, etc. can be used. The silica can be surface treated with the modified polymer by the modified polymer and/or hydrocarbyloxysilane compounds. (col. 2, lines 1-8 and col. 7, lines 36 to col. 8, line 38) Morita is silent on the specific use of a condensation accelerator. However, Ishikawa teaches the use of a tin or titanium condensation accelerator to facilitate the reaction between a hydrocarbyloxysilane compound and the silanol groups on the silica surface. (col. 12, lines 13-24) Therefore, it would have been obvious to

one of ordinary skilled in the art at the time of the invention was made to incorporate Ishikawa' condensation accelerator into Morita' composition. Since Morita' process of compounding the composition does particularly exclude any moisture. As such, the condensation is conventionally performed in atmosphere, i.e., the presence of moisture. Morita further discloses a rubber composition for making tires. (col. 7, lines 24-35) The Mooney viscosity of the composition is exemplified in Examples.

21. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeichi295 (US 6 008 295) in view of Ishikawa (US 6 191 247).

Takeichi295 discloses a composition comprising a modified polymer derived by a process of treating a living polymer with a hydrocarbyloxysilane compound according to the instant claims. (col. 2, line 21 to col. 3, line 11, col. 4, line 14 to col. 8, line 55 and Examples) Fillers such as silica, carbon black, etc. can be used. The silica can be surface treated with the modified polymer by the modified polymer. (col. 11, lines 1-5) Takeichi295 is silent on the specific use of a condensation accelerator. However, Ishikawa teaches the use of a tin or titanium condensation accelerator to facilitate the reaction between a hydrocarbyloxysilane compound and the silanol groups on the silica surface. (col. 12, lines 13-24)

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to incorporate Ishikawa' condensation accelerator into Takeichi295' composition. Since Takechi295' process of compounding the composition does particularly exclude any moisture. As such, the condensation is conventionally performed in atmosphere, i.e., the presence of moisture.

Takeichi295 further discloses a rubber composition for making tires. (col. 11, lines 40-54) The Mooney viscosity of the composition is exemplified in Examples.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuo-Liang Peng whose telephone number is (571) 272-1091. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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klp

August 14, 2006



Kuo-Liang Peng
Primary Examiner
Art Unit 1712